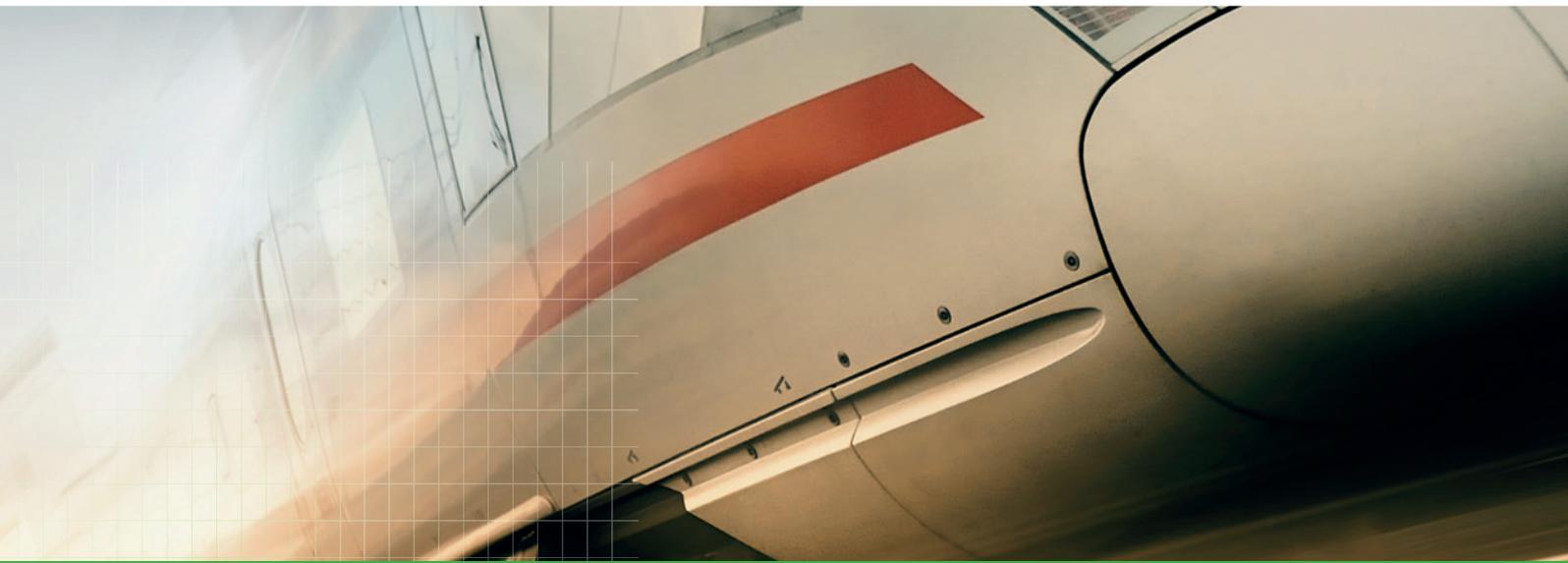




Specialist of resilient materials in **Composite Rubber**



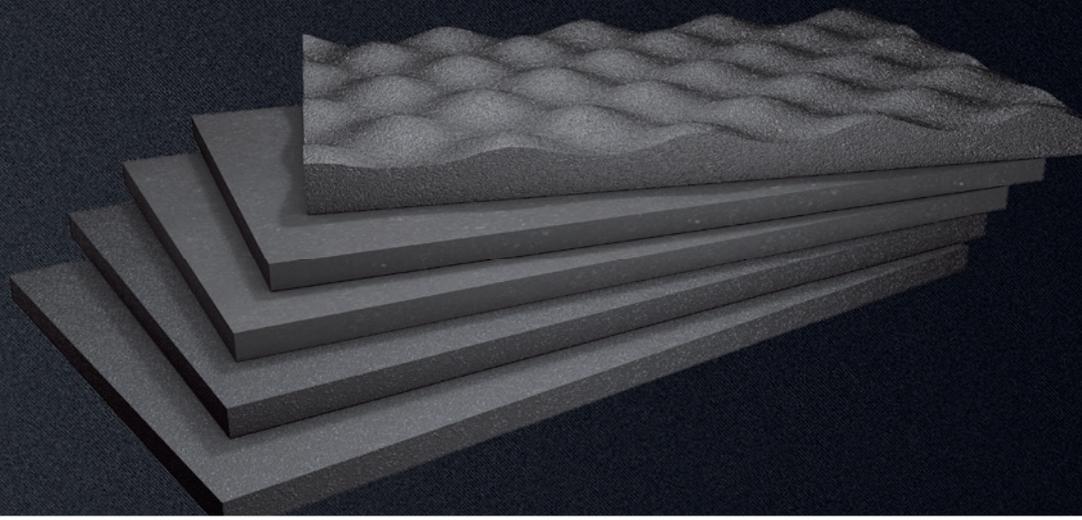
Noise and vibration insulation for embedded rails, ballasted and slab tracks made from natural recycled rubber

Protection and insulation for railway tracks

RubberGreen : manufacturer of highly elastic products and systems for vibration isolation, made from composite rubber

Whether we are talking about trams and metros in a typical urban area or conventional trains or even high-speed rail, each railway project raises specific issues in terms of vibration and acoustics. Thanks to its experience of composite rubber and serious investments made in this sector (R&D), RubberGreen has developed a range of products to be installed under railway tracks that significantly improve the acoustic performance of rails in urban area and reduces also the maintenance costs of the ballast, often damaged by the "wheel-rail" interaction dynamics.

The continuous traffic of trains, trams and subways is a source of many vibrations, whose effects are transmitted through the whole structure of the way - rail, saddle crosses and ballasts - into sub-layers of the surrounding soil. It is therefore crucial to be able to isolate the railway track, whether to improve the comfort of the residents, or extend the life of various components of the railway track - from the track to the ballast. The structure of the mats produced by RubberGreen combines highly resilient rubber in a dimple profiling, which provides unique performance in static stiffness (kstat) and dynamic (Kdyn) with thinner thicknesses than the one of competing products.



Ballast Mat Damper



The RailMat **Ballast Mat Damper** is a vibration damper made of recycled rubber that is installed under the ballast of a railroad. It reduces vibrations of ballasted tracks in urban areas (up to -20 dB @ 63 Hz).

The **Ballast Mat Damper** is suited for tramways and subways as well as for high-speed trains in urban areas.

The **Ballast Mat Damper** is either in the form of a 30 mm mat with both flat sides (directly on the ground stabilized) or in the form of a mat with a dimpled surface and flat on the other (wavy face to down on concrete slab foundation). It is always accompanied by a geotextile membrane between the ballast and the rubber mat.

It is very resistant to wet conditions thanks to its permeability and drainage, and is also resilient to frost and fatigue (tested according to DIN 45673-5).

Benefits

- Very effective solution for reducing vibration nuisance
- Quick and easy installation
- Keep its excellent performance in time
- Eco-friendly solution (100% recycled and recyclable)

Applications

The Ballast Mat Damper is particularly suitable for :

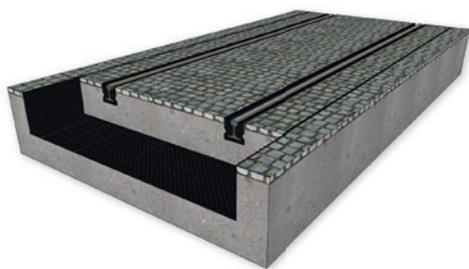
- ballasted tracks
- tramways or metros
- High-speed trains

Technical information

Composition		Grains and fibers of natural recycled rubber with a polyurethane binder
Couleur		Black
Thickness		20 or 30 mm
Density		650 - 700 kg/m ³
Attenuation @ 63 Hz		→ 20 dB
Kstat	DIN 45673-5	→ 35 MN/m ³
Kdyn	DIN 45673-5	← 50 MN/m ³
Resistance to fatigue	DIN 45673-5	Variation Kstat ← 20 %
Resistance to frost	DIN 45673-5	Variation Kstat ← 20 %
Dimensions		Slabs of 600 x 1700 mm or rolls



Slab Mat Damper



The **Slab Mat Damper** is a resilient mat made of natural recycled rubber that surrounds floating slabs of concrete railway tracks and significantly reduces the level of vibration in urban areas (-20 dB @ 63Hz).



The **Slab Mat Damper** comprises of a dimpled surface and a flat one, which provides excellent resilience and a optimum dynamic behavior.

This product can be applied in a single layer or double layers, either for prefabricated sections or "on site" when it comes to pour concrete on a railway track. It fits very well "poured railway tracks" for tramways or traditional railway tracks for high speed trains in urban areas.

It is very resistant to wet conditions thanks to its permeability and drainage features and is also resistant to frost and fatigue (tested according to DIN 45673-7).

Benefits

- Very effective solution for reducing vibration nuisance
- Quick and easy installation
- Keep its excellent performance in time
- Eco-friendly solution (100% recycled and recyclable)

Applications

The **Slab Mat Damper** is particularly suitable for :

- Tramways and underground railway embedded tracks
- Tunnel railway tracks
- High-speed railway tracks in urban areas
- Prefabricated concrete railway tracks or traditional railway tracks

More detailed technical information is available on request



Under Sleeper Pads and Rail Chamber Fillers

Under Sleeper Pads :

RubberGreen's Under Sleeper Pads are produced in different stiffnesses : soft USPs for light loads, and stiff USPs for mixed traffic, transition zones, main lines and high-speed tracks

Positive effects of RubberGreen's Under Sleeper Pads are :

- Less settlement
- Reduction of structure-borne noise
- Better track geometry quality
- Less ballast wear
- Reduction of maintenance efforts
- Positive influence on the Life-Cycle-Cost
- Reduction of long pitch corrugation in curves

Rail Chamber Fillers for Embedded Rails :

Advantages of RubberGreen's Chamber Filler Elements :

- Minimising vibration insulation
- Ecologically oriented, made of recycled rubber bonded with polyurethane
- Removing and reinstalling quickly and easily
- Continuous ventilation, preventing water discharge being clogged by dirt and protection for pedestrians, in case of trench infill chambers
- Flexible layout possibilities
- Modular adaptation to various rail types
- The specific design ensures an excellent compatibility with the surrounding concrete



Values & Vision

RuberGreen values immensely the relationship with its customers, partners and suppliers. In this spirit, RuberGreen always aims to :

- deliver a solution tailored to the requirements of its customers at the right price;
- work in close collaboration and trust with its customers and partners.

Recycling (green credentials) is also at the heart of RuberGreen which, through the creation of performant technical products, gives a second life to rubber waste otherwise destined for destruction or burial.

RuberGreen aims to become a major European and international player in the recycling of rubber, constantly improving the quality and technical solutions developed from composite rubber.

In addition to providing our clients with above products, RuberGreen also provides technical expertise (calculation of isolation performances ...), engineering assistance and on-site assistance.





References



• Brussels
tramway

• Łódź
tram/train
• Sosnowiec
tramway

• Villagarcia
tramway

Barcelona
commuter train

• Girona
tunnel

• Alicante
tramway

• Malaga
metro

• Casablanca



Specialist of resilient materials in **Composite Rubber**

THE COMPANY SHORT PRESENTATION

RubberGreen is the specialist in composite rubber materials and RubberGreen designs and manufactures noise and vibration insulation and comfort solutions for the following sectors:

- Construction & building;
- Railways;
- Industry;
- Dairy and agriculture;
- Others : playgrounds, DIY.

RubberGreen benefits from a state-of-the art machine and manufacturing plant ideally situated at the crossroads of Europe and recycles over 2000 tons a year of high quality rubber.

RubberGreen's management team has over 25 years of experience in the rubber industry.

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The information is not intended to be comprehensive nor does it constitute expert advice. RubberGreen shall not be liable for incidental and/or consequential damages directly or indirectly sustained, nor any loss caused by not complying with relevant industry/product standards and improper use of any RubberGreen products. Due to varying construction methods, any other circumstances not stated above should be brought to the attention of RubberGreen for review. For suitability to the prevailing site conditions, it is advised that certified testing should be conducted. It is recommended to seek further advice on your application with our Partner or our technical staff prior to use.